United Nations ECE/TRANS/WP.15/AC.1/2014/32

Economic and Social Council

Distr.: General
2 January 2014

Original: English

Economic Commission for Europe

Inland Transport Committee

Working Party on the Transport of Dangerous Goods

Joint Meeting of the RID Committee of Experts and the Working Party on the Transport of Dangerous Goods
Bern, 17-21 March 2014
Item 2 of the provisional agenda
Tanks

Transmitted by the European Industrial Gases Association (EIGA)

Holding times for refrigerated liquefied gases in tank containers and demountable tanks[1,2]

Introduction

1. Following further discussion at the Working Group on Tanks in Geneva at the 2013 Autumn Session EIGA was invited to come forward with a proposal to address the issue of premature activation of safety valves in the carriage of refrigerated liquefied gases in RID/ADR tank containers and demountable tanks (see ECE/TRANS/WP.15/AC.1/132/Add.1/para.28). EIGA is proposing a number of changes to the RID/ADR along with industry guidance to users/operators. The EIGA document which is referenced in this proposal will be available for the Working Group on Standards to review prior to the Joint Meeting in March.

Proposal

2. Add a new special provision TU42 in section 4.3.5 of RID and ADR and then add the reference to TU42 in column 13 of Table A to the gases having a classification code starting with 3.

[1] In accordance with the programme of work of the Inland Transport Committee for 2012–2016 (ECE/TRANS/224, para. 94, ECE/TRANS/2012/12, programme activity 02.7 (A1c)).

[2] Circulated by the Intergovernmental Organisation for International Carriage by Rail (OTIF) under the symbol OTIF/RID/RC/2014/32.

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TU 42 The actual holding time shall be determined for each journey of a tank containers and demountable tanks carrying refrigerated liquefied gas on the basis of the following:

(a) The reference holding time for the refrigerated liquefied gas to be carried

(see 6.8.3.4.17) as indicated on the plate referred to in 6.8.3.5.4 ;

(b) The actual filling density;

(c) The actual filling pressure;

(d) The lowest set pressure of the pressure limiting device(s).

NOTE: *ISO 21014:2006 'Cryogenic vessels — Cryogenic insulation performance' details methods of determining the insulation performance of cryogenic vessels and provides a method of calculating the holding time.*

The date by which the actual holding time will be exceeded shall be provided on the transport document.'

Tank containers and demountable tanks shall not be offered for carriage:

(e) In an ullage condition liable to produce an unacceptable hydraulic force due to surge within the shell;

(f) When leaking;

(g) When damaged to such an extent that the integrity of the portable tank or its lifting or securing arrangements may be affected;

(h) Unless the service equipment has been examined and found to be in good working order;

(i) Unless the actual holding time for the refrigerated liquefied gas being carried has been determined.

(j) Unless the duration of carriage, after taking into consideration any delays which might be encountered, does not exceed the actual holding time.

(k) Unless the pressure is steady and has been lowered to a level such that the actual holding time may be achieved[3].

3. Add two new paragraphs, 6.8.3.4.17 and 6.8.3.4.18, as follows:

Holding times for tank containers and demountable tanks carrying refrigerated liquefied gases

6.8.3.4.17 The reference holding time for tank containers and demountable tanks carrying refrigerated liquefied gases shall be determined on the basis of the following:

(a) The effectiveness of the insulation system, determined in accordance with 6.8.3.4.18;

[3] See EIGA document "Methods to prevent the premature activation of relief devices on tanks" to be made available at www.eiga.eu

(b) The lowest set pressure of the pressure limiting device(s);

(c) The initial filling conditions;

(d) An assumed ambient temperature of 30 °C;

(e) The physical properties of the individual refrigerated liquefied gas intended to be carried.

6.8.3.4.18 The effectiveness of the insulation system (heat influx in watts) shall be determined by type testing the tank containers and demountable tanks. This test shall consist of either:

(a) A constant pressure test (for example at atmospheric pressure) when the loss of refrigerated liquefied gas is measured over a period of time; or

(b) A closed system test when the rise in pressure in the shell is measured over a period of time.

When performing the constant pressure test, variations in atmospheric pressure shall be taken into account. When performing either tests corrections shall be made for any variation of the ambient temperature from the assumed ambient temperature reference value of 30 °C.

NOTE 1: *ISO 21014:2006 'Cryogenic vessels — Cryogenic insulation performance' details methods of determining the insulation performance of cryogenic vessels and provides a method of calculating the reference holding time.*

4. Add new text to 6.8.3.5.4, underlined:

6.8.3.5.4 On tank containers and demountable tanks intended for the carriage of refrigerated liquefied gases:

- the maximum working pressure allowed.
- reference holding time (in days or hours)
- initial pressure (in bar gauge or kPa gauge)[13]

Transitional measures

5. Add in a new transitional measure:

1.6.3.xx Tank containers and demountable tanks for Class 2 built before 1 January 2015 where there is no reference holding time available may continue in service, For these tanks the actual holding times may be estimated, without recourse to the reference holding time. Tank containers and demountable tanks for Class 2 which were marked according to the requirements of ADR prior to the 1 January 2015 may continue to be used until the date of the next periodic inspection.